



**City of Richmond**

**Report to Committee**

**To:** Public Works and Transportation Committee *to Public Works! Transportation - June 22, 2005* **Date:** May 27, 2005

**From:** Victor Wei, P. Eng.  
Acting Director, Transportation **File:** 10-6450-09-01/2005-Vol 01

**Re:** **TRAFFIC SAFETY CONCERNS - 22000 BLOCK RIVER ROAD**

**Staff Recommendation**

1. That the existing traffic control and speed enforcement at the 22,000 block of River Road be maintained at this time.
2. That staff continue to monitor this section of River Road to determine if further traffic safety enhancements are warranted.

Victor Wei, P. Eng.  
Acting Director, Transportation  
(4131)

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<b>ROUTED TO:</b>		<b>CONCURRENCE</b>		<b>CONCURRENCE OF GENERAL MANAGER</b>	
R.C.M.P. ....	Y	<input checked="" type="checkbox"/>	N	<i>He Wei</i>	
Engineering .....	Y	<input checked="" type="checkbox"/>	N		
<b>REVIEWED BY TAG</b>		YES	NO	<b>REVIEWED BY CAO</b>	
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## Staff Report

### Origin

Since September 1997, City staff have been working with residents of the 22,000 block of River Road to address concerns with traffic and pedestrian safety in their neighbourhood. Recently, the City received a letter on April 6, 2005 from Mrs. Marilyn Oswald, a resident within this area, requesting that the City investigate ways to improve traffic safety on the 22,000 block of River Road.

In addition, at the April 12, 2005 Community Safety Committee, the following referral was made:

*That the correspondence (dated April 6<sup>th</sup>, 2005, from Marilyn Oswald), regarding safety and traffic concerns in the 22000 block of River Road, be referred to staff for comment and investigation of the excessive speed of vehicles along this road.*

This report summarizes the actions the City has taken to-date to improve traffic safety on River Road and presents possible additional traffic safety measures that can be considered to address the resident's concerns.

### Analysis

#### 1. Past Improvements

In September 1997 a petition was received from residents of the 22,000 block of River Road stating their concerns with speeding vehicles and truck traffic volume on this section of River Road. In response to those concerns, staff carried out the following actions and improvements.

- Speed limit signs were installed at cross streets along River Road indicating the maximum speed limit of 50 km/hr for cars and 30 km/hr for trucks.
- Road markings were improved to provide drivers with more guidance while travelling along the roadway, including improving the road marking reflectivity and installing raised pavement markers for nighttime driving.
- Additional road signs, hazard markers and delineator posts were installed to advise drivers of potential traffic hazards. Oversized speed limit signs were used at the start of all speed limit zones to increase driver awareness of the speed limits.
- All existing streetlights on River Road that were leased from BC Hydro were serviced and re-lamped to improve street lighting levels.
- On-street parking was removed from this section of River Road as the shoulder of the roadway is narrow and any parked vehicles would impede through traffic causing concerns for both drivers and pedestrians.
- New double yellow solid centre lane lines.
- Regular enforcement by the Richmond RCMP of the vehicle speed and truck load limits on River Road.

In 2001, in response to concerns raised by area residents a 1.2 metre wide, 300 metres in length asphalt walkway was installed on the south side of River Road. This walkway provided safer pedestrian access to the Queen Road right-of-way for area residents. At the same time, additional speed limit signs were posted in the area of the Queen Road right-of-way (Attachment 1).

## 2. Traffic Characteristics

The following tables summarize the observed changes in traffic characteristics in the 22,000 block of River Road over the last 8 to 11 years.

**Table 1. Accident History – 22,000 Block River Road**

Year	Number of Crashes
1997	2
1998	4
1999	2
2000	1
2001	0
2002	1
2003	0

**Table 2. River Road Traffic Count Data - 1994 to 2005 – 22,000 Block River Road**

Direction	85 Percentile Speed	AADT Volume	Percentage of Trucks
December 1994			
Eastbound	Not Available	1525	Not Available
Westbound	Not available	1068	Not Available
October 1997			
Eastbound	71.70 Kmh	1204	25.02
Westbound	70.90 Kmh	1129	10.72
March 2005			
Eastbound	70.22 Kmh	957	1.30
Westbound	71.67 Kmh	1132	1.90

*Accident History* – The number of accidents recorded within this section of River Road between 1997 and 2003 was generally found to be decreasing from an average of 3 per year to less than one per year.

*Traffic Volume* - Eastbound traffic volumes have declined, while westbound volumes have remained at approximately 1100 vehicles per day. The most significant difference shown in the traffic data is the reduction in the percentage of truck traffic. There are a number of businesses that require large trucks to access River Road from Westminster Highway; however, more trucks are now accessing River Road from No. 6 Road due to the traffic enhancement measures implemented to-date.

*Traffic Speed* - The traffic engineering industry uses the 85<sup>th</sup> percentile speed to determine the operating speed of a roadway for design and safety assessment. This speed is defined as the

maximum speed at which 85% of the traffic is found to be travelling. The 85<sup>th</sup> percentile speed within this section of River Road has remained constant from 1997 to 2005 at approximately 71 km/hour which is considered to be at the margin of tolerable limit (typically 20 km/hour over the posted speed limit depending on the roadway geometry and conditions). In this case, given that both truck volumes and accident records have dropped over the last several years, the existing operating speed is not considered to be a major factor in warranting additional traffic measures.

### 3. Options for Course of Action

There are two options that can be considered to respond to the resident's concerns:

Option 1: Maintain Current Traffic Control - The traffic safety measures implemented by the City to-date have reduced the volume of car traffic on River Road. The truck traffic volume has also been reduced significantly on this section of River Road. The 85<sup>th</sup> percentile speed for all traffic has remained a constant at 71 km/hr, indicating a moderate speeding problem in light of the road geometry and conditions. The number of car accidents reported on this roadway remains low and the implementation of a paved walkway has provided a safer environment for pedestrians. However, the replacement of delineators along the north side of River Road and raised pavement markers along the lane and edge lines of the roadway is required due to regular wear and tear. This will be addressed as soon as possible through the City's regular road marking maintenance program.

Option 2: Install Speed Humps - Where speed humps have been implemented in the city, they have proven to slow traffic speed. A series of four speed humps designed for 50 km/hour operating speed and placed 100 metres apart can be considered through the residential area of the 22,000 block River Road to discourage drivers speeding at each speed hump location. Experience with this type of traffic calming measure however, has shown that drivers accelerate between speed humps to make up for the perceived time they have lost by the speed hump. Although it is technically feasible to install speed humps on this section of River Road, the traffic data observed and presented above suggests that their installation at this location is not warranted at this time.

### **Financial Impact**

To maintain the current traffic control at the 22,000 block of River Road would require the replacement of approximately 30 roadside delineator posts and 25 raised pavement markers. These improvements would provide better guidance for drivers travelling on River Road at night. The estimated cost of these improvements is approximately \$2,000.

Alternatively, the installation costs of speed humps at this location is estimated at approximately \$2,500 per speed hump. This cost would include the required speed hump signage and road markings for a total estimated cost of \$10,000 for four speed humps at this location.

The funding source for either of the above options would be 2005 City Capital Program Account 1501-40-000-TRAF-0000-40257 - Neighbourhood Traffic Safety Account.

## Conclusion

The 85<sup>th</sup> percentile traffic speed at the 22,000 block of River Road is consistently 71 km/hr for the last eight years, which indicates the operating speed remains at the margin of tolerable limits for warranting further actions to deter speeding. The number of traffic accidents each year is low, indicating that drivers are safely navigating this portion of River Road at the speed they are driving.

In light of low accident frequency and decreasing truck volumes, staff recommend that the current traffic control be maintained by replacing missing delineator posts and raised pavement markers to ensure driver safety at night.

Staff will continue to monitor this section of River Road to determine if further traffic safety enhancements are required. Staff also recommend that the Richmond RCMP continue their program of speed enforcement in this area on an on-going basis.



Robert Gilchrist  
Traffic Supervisor  
(4030)

RG:lce

## 22000 River Road



21000 Block River Road looking east, shows car and truck speed limit signs



River Road at Queens Road walkway looking west